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overwrite an already present short message of the same cellular phone with the received short message.

The MMS service is a service, which is intended to make possible the transmission and reception of multimedia messages, using a cellular phone. The current (temporary) state of standardization of MMS is found in 3G TS 23.140, MMS Stage 2, v.1.0.0. In contrast to an SMS short message, a multimedia message (MM) should be limited to neither a certain length, nor the display of text. An MM should instead support various types of media.

The MMS relay has a central function in the MMS service. As shown in 3G TS 23.140, MMS Stage 2, v.1.0.0, this element may be connected to various servers (e.g. an email server, fax server, voice mailbox, and MMS server), using a large variety of media. Its purpose is to grant the mobile user access to all of the information/messages on the above-mentioned servers. Thus, the MMS relay allows the mobile user access to his e-mails on the e-mail server, or to faxes "waiting" for him on a fax server, or to voice messages recorded on his voice mailbox, etc. Aside from the receipt of messages, it is also intended that the mobile user be able to write messages and send these to the desired recipient via the MMS relay.

3G TS 23.140, MMS Stage 2, v.1.0.0, provides for, inter alia, the user of the MMS service logging on to his MMS service provider (session establishment). He can then obtain a receipt for the log-on (receipt), depending on his service profile. If unread messages for him are on his MMS server, then he can receive a message (notification) about it, to be sure, in accordance with his service profile as well. In this connection, an MMS server may stand for one or more arbitrary servers, e.g. one or more e-mail servers, fax servers, possibly special MMS servers (if an independent MM format is standardized), or arbitrary combinations of these.

In the same way, he can receive a message in accordance with his service profile, when a new message arrives at the MMS server during an MMS session. If his profile is set up such that he does not automatically receive notification of unread and/or new MM messages, then, according to the specification, the MMS service should allow the user to explicitly request such a notification from the MMS relay (explicit notification query). In the service profile, the user may also specify if he would like to receive, from the service provider, a confirmation of the success of transmitting the MM's to other users.

In this connection, one may distinguish between two types. First of all, the user may receive a reply from the MMS relay indicating that his sent message was successfully sent to the relay via the air interface: ACK/NACK submission 1: positive/negative acknowledgment of submission to relay. In addition, he can receive a reply from the receiver and/or from the MMS relay indicating that the receiver successfully received the message: ACK/NACK submission 2: positive/negative end-to-end acknowledgment of submission to receiver. The MMS service should also offer the possibility of the service provider (the MMS relay) receiving a reply regarding the success/failure of the delivery of an MM to a subscriber: ACK/NACK delivery. 3G TS 23.140, MMS Stage 2, v.1.0.0, 3GPP TSG T WG 2, November 1999, also provides for the triggering of automatic downloading of messages by an SMS (pull-push).

The above-mentioned functionality and messages regarding the MM are written in the applications level, but their implementation is open. All of this functionality and these messages, as well as similar functionality and messages, may be implemented in many different forms. The general problem of the present invention is that, in the MMS

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message service, different types of messages are sent, such as the above-mentioned notifications from the system and actual user messages, whereby the latter may also be quite varied in their content, for instance, short text messages or long video, audio, or other messages. As a result, there is no transmission scheme that is equally optimized for all messages.

SUMMARY OF THE INVENTION

The idea forming the basis of the present invention is that predetermined messages of the first message service are sent, using messages of the second message service. Certain methods of the present invention have the particular advantage that an optimized transmission scheme may be maintained for the dedicated messages of the first message service. In a specific example, a transmission scheme that provides for simple sending is selected by the SMS message service, for the dedicated messages in the MMS. Therefore, line-oriented transmission, e.g. using GSM circuit switched data or GPRS general packet radio service or UMTS circuit or packet switched data that are always associated with a great deal of overhead for setting up a connection/session, is dispensed with. Thus, according to certain embodiments, messages of a second message service are sent between a transmitter and a receiver without line-oriented transmission.

According to certain embodiments, a dedicated, second group of messages of the first message service are sent between the transmitter and the receiver, using line-oriented transmission. The first message service may be a multimedia message service, preferably the MMS message service. The second message service may be a short message service, preferably the SMS message service. In the context where the first message service is the MMS message service and the second message service is this SMS message service, the dedicated, first group of messages of the first message service includes at least one of the following messages: dedicated MMS user messages (e.g. short text messages); notification of the presence of a message on the MMS server (notification); logging on to an MMS session (session establishment); receipt for this log-on (receipt); explicit request for a notification from the MMS relay (explicit notification query); confirmation of the reception of sent MM's in the relay (ACK/NACK_submission_1); confirmation of the success in sending an MM's to other users (ACK/NACK_submission_2); acknowledgment of the success/failure in delivering an MM (ACK/NACK_delivery); and triggering the automatic M M-download (pull-push).

An advantage of such an implementation is that SMS already exists, and the use of this service therefore facilitates the market introduction and acceptance of MMS. SMS makes available a reliable service for the above-mentioned notifications. When SMS is used, there is no need for additional signaling for transmitting notifications. SMS offers a bandwidth-friendly service for such simple notifications, this service also being simultaneously usable for ongoing connections or sessions in the GSM, GPRS, and UMTS system. SMS is also available in second generation cellular phones (e.g. GSM). Therefore, a user may use essential features of the MMS service without necessarily requiring a (an expensive) third generation cellular phone (e.g. UMTS).

According to certain embodiments, an SMS short message is provided with a data portion, which has at least one of the following elements for establishing the message of the first message service: identification of the type of message of